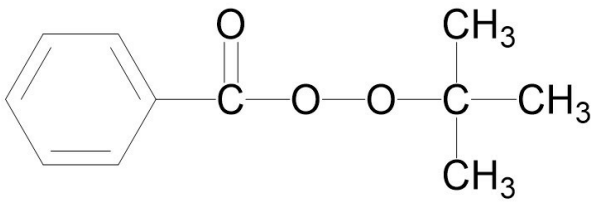
Trigonox 93

tert-Butyl peroxybenzoate, 80% solution with acetylacetone



Trigonox® 93 is a promoted tert-butyl peroxy ester for the cure of unsaturated polyester and vinylester resins. Trigonox® 93 is based on an aromatic perester, alternatively Trigonox® 42PR can be used which is an aliphatic perester.

CAS number 614-45-9	EINECS/ELINCS No. 210-382-2
TSCA status listed on inventory	Molecular weight 194.2
Active oxygen content peroxide 8.24%	Concentration 6.39 - 6.67%

Specifications

Appearance	Clear liquid
Assay	77.5-81.0 %
Color	100 Pt-Co max.

Characteristics

Density, 20 °C	1.030 g/cm^3
Melting point	(tends to undercooling) 0 °C
Viscosity, 20 °C	4 mPa.s

Applications

Trigonox® 93 is a peroxide formulation based on tert-butylperoxybenzoate and acetylacetone. Trigonox® 93 has been developed for the cure of unsaturated polyester resins in combination with a cobalt accelerator (e.g. Accelerator NL-53N = 10% cobalt) in the temperature range of 60°C and higher. Trigonox® 93 plus a cobalt accelerator can effectively be used as a match for Trigonox® 21S in those areas where the use of Trigonox® 21S is restricted by its official transport and storage temperature of max. 20°C. Application area for the cure system Trigonox® 93 plus a cobalt accelerator can be e.g. artificial marble, polymer concrete, filament winding and air drying lacquers. The combination Trigonox® 93 plus a cobalt accelerator and possibly an amine accelerator like N,N-Dimethylaniline is also very suitable for the ambient temperature cure of vinylester resins. Trigonox® 93 gives in these resins a much faster cure than the commonly applied peroxides Butanox LPT-IN and Trigonox® 239.

Thermal stability

Organic peroxides are thermally unstable substances, which may undergo self-accelerating decomposition. The lowest temperature at which self-accelerating decomposition of a substance in the original packaging may occur is the Self-Accelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

SADT	65°C
Method	The Heat Accumulation Storage Test is a recognized test method for the determination of the SADT of organic peroxides (see Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria - United Nations, New York and Geneva).

Storage

Due to the relatively unstable nature of organic peroxides a loss of quality can be detected over a period of time. To minimize the loss of quality, Nouryon recommends a maximum storage temperature (Ts max.) for each organic peroxide product.

Ts Max.	25°C
Ts Min.	-5°C
Note	When stored under the recommended storage conditions, Trigonox® 93 will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

The standard packaging is a 30-liter HDPE can (Nourytainer®) for 25 kg peroxide solution. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Trigonox® 93 is classified as Organic peroxide type C; liquid, Division 5.2; UN 3103.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® 93 in a dry well-ventilated place away from sources of heat or ignition and direct sunlight. Never weigh out in the storage room. Avoid contact with reducing agents (e.g. amines), acids, alkalis and heavy metal compounds (e.g. accelerators, driers and metal soaps). Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of Trigonox® 93. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at nouryon.com/sds-search

Major decomposition products

Carbon dioxide, benzoic acid, tert-butanol, acetone, benzene, methane, ethane, diphenyl

Contact Us

Polymer Specialties Americas
polymer.amer@nouryon.com

Polymer Specialties Europe, Middle East, India and Africa
polymer.emeia@nouryon.com

Polymer Specialties Asia Pacific
polymer.apac@nouryon.com